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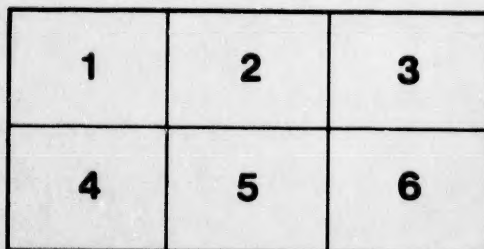
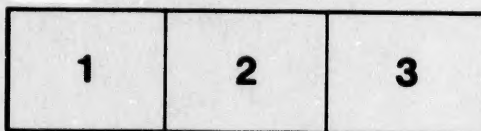
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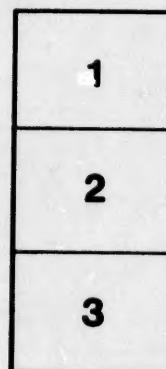
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BRITISH COLUMBIA.

CORRESPONDENCE

ON THE SUBJECT OF A

GRAVING DOCK

AT ESQUIMALT, B. C.;

ALSO,

COPY OF ADVERTISEMENT AND TENDER FOR ITS CONSTRUCTION

AND

Reports of Chief Engineer to Government

ON THE SUBJECT.

OTTAWA:

PRINTED BY ROBERTSON, ROGER & CO., "THE TIMES," WELLINGTON STREET.

1873.

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BRITISH COLUMBIA.

CORRESPONDENCE

ON THE SUBJECT OF A GRAVING DOCK AT ESQUIMALT, B.C.;

ALSO,

COPY OF ADVERTISEMENT AND TENDERS FOR ITS CONSTRUCTION,

And Reports of Chief Engineer to Government on the Subject.

CORRESPONDENCE ON THE SUBJECT OF A GRAVING DOCK, AT ESQUIMALT.

Rear Admiral Hastings to Governor Seymour.

ZEALOUS, IN ESQUIMALT,

20th August, 1867.

SIR,—Having received instructions from the Lords Commissioners of the Admiralty to report upon the facilities afforded on this station for docking vessels the size of my flag ship, I beg to acquaint Your Excellency that having failed to find such, I have directed a Board of officers to select the most eligible site in this harbor for the construction of a dock.

I now enclose for Your Excellency's information, the report I have received from them, and the services of Mr. Pearce, Assistant Surveyor-General, having been kindly rendered in consequence of my application to the Colonial Secretary, during your Excellency's absence, I am glad to be enabled to inform you that so far as the borings have yet

been carried, the nature of the bottom is most favorable for such a work.

Before making my report to their lordships, I shall communicate further with Your Excellency.

I have, &c.,
(Signed,) GEO. F. HASTINGS.
Rear-Admiral, Commander-in-Chief

His Excellency
Governor Seymour, &c., &c.

Report on the most convenient site for erecting a Dock at Esquimalt, for the accommodation of Ships of the Squadron.

(No. 58.)

H. M. S. "ZEALOUS,"

ESQUIMALT, 31st July, 1867.

SIR,—In compliance with your memorandum of the 27th instant, we have proceeded to examine the Harbor of Esquimalt for the purpose of fixing on the most favorable site for building a dock calculated to receive such a ship as the "Zealous," or even larger, and beg to report as follows:

1st. We find, on examination of the charts, that "Lang Cove" offers every facility for the formation of a graving dock, and would give twenty-four feet over the sill at high water.

2nd. Before a decisive opinion can be given, we require that the cove at the upper end should be bored, and a survey taken of the surrounding land. Captain Stamp, of Victoria, is we believe the owner or part owner of the property referred to.

3rd. To effect this recommendation, a civil engineer should in our opinion be employed.

4th. As in the formation of a graving or other dock, labor would in most part have to be supplied from England, we would beg to offer as our suggestion that reference be made to the system in use at San Francisco for docking ships by means of iron pontoons; as although a graving

dock would in our opinion be in all respects superior to any other, time in the erection of a dock (especially as our report has special application to the "Zealous") should be considered.

We have the honor to be, Sir,
Your obedient servants,

(Signed,)	R. B. OLDFIELD, Captain, <i>H. M. S. "Melacca."</i>
do	R. DAWKINS, Captain, <i>H. M. S. "Zealous,"</i>
do	W. A. LIDDELL, Commander, <i>H. M. S. "Zealous."</i>
do	GEO. L. CARR, Staff Commander, <i>H. M. S. "Zealous."</i>
do	DANL. PENDER, Master, <i>Commanding "Beaver."</i>
do	THOMAS ROGERS, Carpenter, <i>H. M. S. "Zealous."</i>

Rear-Admiral

The Hon. George F. Hastings, C.B.,
Commander-in-Chief.

Rear-Admiral Hastings to Governor Seymour.

"ZEALOUS," AT ESQUIMALT,
16th October, 1867.

His Excellency
Governor Seymour, &c., &c.,
British Columbia.

SIR,—Referring to former correspondence and communications which have passed between Your Excellency and myself respecting the construction of a dock in this colony, I beg to acquaint you that having visited lately the Port of Nanaimo, and also Burrard Inlet, both of which localities have been pointed out as offering the best sites for such a work, I am still more confirmed in my opinion that in Esquimalt Harbor is to be found the most eligible situation for a dock.

The geographical position of this harbour, the facilities of ingress and egress at any time of the day or night for sailing vessels, and the depth of water and nature of the bottom in Lang Cove—the best site therein—gives it such indisputable advantages over every other port in this colony with which I am acquainted, that I have strongly urged upon the Lords Commissioners of the Admiralty the importance of such a work being therein undertaken by the Imperial Government.

The benefit that would thereby accrue to the colony under Your Excellency's Government must be so apparent as not to require comment from me, and I trust you may find yourself in a position to make such representation thereon to the Colonial Secretary of State as may tend to strengthen those which I have already made to the Admiralty.

(Signed,)

I have, &c.,
GEO. F. HASTINGS, Rear-Admiral,
Commander-in-Chief.

Governor Seymour to Rear-Admiral Hastings.

NEW WESTMINSTER,
31st October, 1867.

Rear-Admiral
The Hon. G. F. Hastings, C.B.

SIR,—I have had the honor to receive your letter of the 16th instant, informing me that after having inspected the three ports of Esquimalt, Nanaimo, and Burrard Inlet you have come to the conclusion that the first named possesses the greatest advantage for the establishment of a dock.

The proposed work would be so extremely advantageous to the colony, that I shall be happy to write to the Secretary of State in support of the advice you have already tendered to the Lords of the Admiralty. In a professional matter of this kind I shall not venture to set my own judgment against yours; but I have no doubt that the striking advantages of the head of the north arm of Burrard Inlet have not escaped your attention.

There is even ground, abundance of fresh water, a position unassailable by land, and which might be made equally so against an enemy's fleet.

However, since you have arrived at a conclusion, I will support that conclusion with His Grace the Duke of Buckingham

(Signed,) I have, &c.,
FREDERICK SEYMOUR.

Governor Seymour to the Secretary of State.

[Copy. No. 7.]
The Right Honorable
The Duke of Buckingham
and Chandos.

NEW WESTMINSTER,
6th February, 1868.

MY LORD DUKE,—I have the honor to forward copies of a correspondence which has passed between Admiral Hastings and myself respecting the construction of a dock of considerable size in this colony.

2. I hardly like to place myself in opposition to Admiral Hastings in a matter of which his professional knowledge makes him a much better judge than myself. There is no doubt but that Esquimalt possesses an admirable harbor. My only objection to it was its extreme accessibility—day or night any ship might run in; but it is not even necessary to run in, as a vessel lying outside might shell any buildings in the dockyard or any vessel in the harbor.

3. Admiral Hastings appears to believe in the supremacy of the English fleet in the North Pacific under any circumstances. If such supremacy always exists, Esquimalt is clearly the place most desirable for the establishment of a dock. I cannot but consider, on the other hand, the possibility of our being worsted. In such a case, Burrard Inlet would have immense advantages, inasmuch as ships might run fifteen or sixteen miles up the inlet, having a certain number of men or guns at the entrance where a hill one hundred and eighty (180) feet high runs immediately over the deep channel. In Burrard Inlet are to be found abundance of fine timber and plenty of fresh water.

4. A dock in Esquimalt or Burrard Inlet would however be equally valuable to the colony in time of peace, and I hope that no hesitation I may feel as to the wisdom of Admiral Hastings' selection may stand in the way of his recommendation.

I have, &c.,
(Signed,) **FREDERICK SEYMOUR.**

[Copy. No. 27.]

The Colonial Secretary to Governor Seymour.

DOWNING STREET.

15th May, 1868.

Governor Seymour, &c., &c.

SIR,—I have the honor to transmit to you, for your information and in reply to your despatch of the 6th February, No. 7, a copy of a letter from the Admiralty enclosing copy of one from the hydrographer, in which he expresses his opinion that Esquimalt is the fittest place in the colony for a naval dock.

I have, &c.,
(Signed,) **BUCKINGHAM AND CHANDOS.**

Mr. Romaine to the Under Secretary of State.

[Copy.]

ADMIRALTY,
9th May, 1868.

The Under Secretary of State,
Colonial Office.

SIR,

I am commanded by my Lords Commissioners of the Admiralty to acknowledge the receipt of your letter of the 27th ultimo, transmitting the copy of a despatch from Gov-

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Friday, July 23, 1879.

The Dry Dock.

A meeting will be held this evening at Esquimalt to discuss the Dry Dock question, and we hope to see it largely attended. We look upon this question as being to the people of this Province second only in importance to that of the Canada Pacific Railway. In fact the one is a necessary adjunct to the other, and it is a good sign to see the people waking up to the importance of this subject. We claim to be second to none in our earnest desire to see this work speedily undertaken and prosecuted to a successful issue. Its importance to the commercial interests of the country generally, and to Esquimalt and Victoria in particular, cannot but be apparent to every reflecting mind. As to the desirability, nay, the necessity, of having a dry dock at Esquimalt, we believe there are no two opinions. There is, however, a difference of opinion as to the most advisable course of procedure for the accomplishment of the undertaking. A dry dock capable of meeting the commercial requirements of the country, will involve the expenditure of a large sum of money. It must be a first class concern, for although a dock of very moderate pretensions might answer the demands of the present, it must be borne in mind that not many years will elapse until vessels of the largest class will traverse these waters, hailing from all quarters of the globe. Less than ten years will suffice to work a complete revolution in commercial affairs in this part of the world, when for every steamship and sailing vessel that now enters the Straits of Fuca we may reasonably expect to have twenty. No second-rate dock will then answer the requirements of the future, and hence in discussing the question of the dry dock these facts should be kept prominently in view. It will therefore, be borne in mind that the cost of the proposed dock will be a very expensive undertaking. And how can this best be accomplished? It may be built as a Dominion work with Dominion money, and the revenues therefrom go into the Dominion treasury; or, secondly, it may be undertaken by the Provincial Government upon the strength of the credit of the Dominion Government to pay interest at the rate of five per cent upon one hundred thousand pounds, for a period of ten years.

We believe we may say with every degree of confidence that there will be no serious difficulty in obtaining the Dominion Government to undertake the entire responsibility of constructing the dock, and that it would be much to the interest of the people of British Columbia were they to do so. One effect of such management would be to procure the construction of the dock in very much less time than it could be effected if undertaken by the Provincial Government. The amount of money required for the purpose they could command at any moment, without incurring the loss of time and the expense of going upon the English money market to borrow it, as the local government would have to do. Besides, such an undertaking just now would probably seriously cramp the Provincial Government in a financial point of view, and cripple their energies in respect of other public works which are pressing upon the attention of the Government, and cannot be deferred without detriment to the country and inconvenience to the public. As a Dominion work, we feel assured that a dry dock at Esquimalt would yield a fair interest on the amount of capital required to build it—probably not immediately, but within a very few years from the date of completion. Should there, for a limited period of time, be a deficit in the receipts accruing from tolls for dock service, that would entail no serious inconvenience upon the Federal treasury, whereas if it had to be made good from the ordinary income of the Provincial treasury, it might cause no little embarrassment to the local Government and hinder them in their efforts to carry out other enterprises essential to the development of the country's resources. For the reasons we have given, we feel assured our friends at Esquimalt will be disposed to look at this subject with a calm and dispassionate eye. We know how great an interest they feel in reference to this question, and we heartily sympathize with them in the desire they cherish to see the work commenced. Better, however, to examine the subject carefully, to look at it in all its details, before rushing into it, lest by undue haste they should retard the enterprise instead of facilitating the accomplishment of their purpose. Of this the public may rest assured, the Government are fully alive to the importance of having the dry dock built, and are determined that no unnecessary time shall be wasted in undertaking its construction. Did they not use due caution in every step they take in connection with this great enterprise, those who are now using all the influence they can bring to bear upon the public mind with a view to creating a feeling of prejudice against the Government in reference to this dry dock question, would be the very first to condemn them on that account, and to bring railing accusations against them for not having given the subject the degree of calm consideration that its importance demanded. The dry dock will assuredly be built, and that at the earliest practicable moment; but the first duty of the Government is to determine how it can be done, not only cheaply and expeditiously, but so as to bear as lightly as possible upon the Provincial exchequer and the pockets of the people.

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Another Sale in the Graving Dock. A few gentlemen are to be given free rides to the town, and they are expected to give in return for their service, three and three pence, for some of the gentlemen (7) who are supposed to take over the dock, a big interest in the dock. Had the dock been in the hands of a single person out of four hundred, all the business, and many of them, who signed an agreement against their inclination—notwithstanding the offer of the present Government together with the daily boy with the glass and spent four days in trying to get up the dock, and to discuss the people's business. The Hon. the Premier of the Government, a few days ago gave all the information that could be had on the subject of the dock. What do the few street-minded and disappointed office seekers want more? Better let well enough alone. It is a dangerous thing to tamper with a matter that might possibly retard the construction of the great work we all hope to see taken in hand at an early date. The people of England may rest assured the present Government will have no stone unturned to forward their interests in this particular; they have shown more energy, more interest, and more real work in connection with the graving dock than all previous administrations taken together. Had it not been for the blundering of the late Government the building of the dock might now be well in hand. Again we don't be led astray by a few designing persons who have nothing to lose, but who might possibly cause harm to those who have something to guard and protect.

Deceased Government.—We learn that the Hon. Mr. DeCosmos will, in a few days, leave Canada and will be absent a week or so on private business, and in reënt his health with the trying and unexampled ordeal of going through two parliamentary sessions in seven months,—one on the Pacific, and the other on the Atlantic side of the continent,—four thousand miles apart; but that shortly after his return he will address the citizens of Victoria and the other districts of Vancouver Isl. and possibly the Mainland,—on the live political issues of the day, both Provincial and Federal. We welcome the move as one in the right direction, showing that for the first time we have a Provincial administration determined on consulting with the people in order to govern according to their wishes.

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VICTORIA, July 26, 1873.

THE DRY DOCK MEETING AT ESQUIMALT.

SEVEN MALCONTENTS.

A Dead-lock and Adjournment.

The meeting announced to take place at Esquimalt to discuss the question of the dry dock to be erected at that port, took place at Sellers' hotel last night.

On motion, Wm. Fisher, Esq., was voted to the chair, and although the hour named for the meeting to be convened, was 7 o'clock, one hour later only about thirty residents had assembled.

The chairman, in opening the proceedings of the evening, said that it gave him great pleasure to preside at any meeting whereat matters of public import were to be discussed. He regretted, however, that so many public men were absent. He had received a letter from the Hon. the Premier, stating that it was impossible for him to be present, and he was telling him (Mr. Fisher) to postpone the meeting until a more favorable opportunity. This, however, the chairman did not think was in his power, and he would therefore call upon any gentleman who felt inclined to address the audience.

Mr. Williams, ascending the platform, said he was glad of the opportunity to state that he had no feeling of rancor towards the Hon. the Premier, or indeed against the present Government. He had started the requisition for the meeting, to discuss a matter of vital importance to Esquimalt, and he had hoped that the Hon. Mr. DeCosmos would have been able to have come and given them information on the subject. The people of Esquimalt were all more or less ignorant of the status of the affair, and it was solely to enlighten the public on so important a question, that the representatives of the district had been invited to attend. Both Messrs. Robertson and Ogden were absent, notwithstanding that an invitation had been extended to them; he hoped however to hear the subject ventilated.

Mr. Waterhouse, in a few remarks, amidst laughter and confusion, also regretted the absence of their members, and especially of the Hon. the Premier, as from him alone, he believed, the true position of the dry dock scheme could be arrived at. The Colonist, he said, was at loggerheads with the Government, and only worked for an exposition of the truth when the "pocket" became the main question.

The following letter was here handed in to the chairman from the Hon. Mr. DeCosmos:

GENTLEMEN,—I hope you will excuse me for not accepting your invitation to be present at a public meeting of the inhabitants of Esquimalt this evening. I promise you, however, that in two or three weeks I will invite the electors to meet me in your town, when I will take an opportunity to express my views on the dock as well as on other public questions. Like yourselves, I have ever taken a deep interest in "the dock question" and will take this occasion to assure you that it is my firm belief that the Provincial Administration, of which I am a member, will not only secure the early commencement but will see the completion of a graving dock in your noble harbor. Thanking you for the honor of your invitation,

I remain,

Very truly yours,

A. DeCOSMOS.

To Messrs. F. Williams, W. Fisher and others.

Mr. Bunster, M.P.P. being called upon regretted the absence of the Hon. the Premier and the representatives of the district; he thought that taking everything into consideration the best thing to do would be to adjourn until the Hon. the Premier could meet the people of Esquimalt. He had no doubt that the Dry Dock could be built if properly handled and believed that the local Legislature could find capitalists in England to take up any good scheme which might be matured. He for one would be willing to mortgage the Province to the tune of £20 to £25,000, and urge the construction of the dry dock at once. It would bring the mechanic to British Columbia, and keep him busy and moreover be a great attraction to H.M. navy, which he believed were of more importance to the country than all the gold of Cariboo. Owing, however, to the absence of the local representatives he would not speak at any length now.

Mr. T. Humphreys followed the last gentleman and reiterated the regret expressed at the absence of the Hon. the Premier and the local representatives. He believed it their duty to have been there, and to have told those assembled all that was known about the dry dock question. He thought that had the latter been placed in the hands of good business men a scheme could easily have been floated, but the McCreight Ministry had made a blunder of it from the beginning and he, for one had voted to put them out of power, hoping that the DeCosmos Ministry would improve the state of affairs. When, however the Hon. Premier had stated in the local House that he thought that he could get "better terms,"—increasing the guarantee £75,000 to £100,000—Mr. Humphreys—for one had grave doubts as to the correctness of the assertion. When the Hon. Mr. DeCosmos arrived at Ottawa and found the question finally settled and that the Dominion Government were resolved not to grant better terms, he believed that he (Mr. De

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Cosmos) had allowed the matter to drop and that he had failed to take further interest in the question. The reply which he had made to an enquiry of Mr. Robertson, M.P., he thought placed the Hon. the Premier in an awkward position, and each being the state of things, it was to be regretted that immediate action should not be taken to construct the dock on the guarantee of £75,000. He was satisfied the local Government had no scheme at all to build a dry dock, but the proper plan would be to begin at once; so pocket in fact all the money to be obtained from the Dominion Government, and proceed at once to the building of the structure. The question at issue was, however, of vast importance to the whole province, but from the absence of those gentlemen alluded to, he would refrain from dilating upon the subject until such opportunity should arrive as would enable them to be present.

The meeting of course was dead-lock. No resolution was forthcoming, and no person present seemed at all inclined to address the audience. One of the proprietors of the *Colonist* newspaper would have been pleased to have heard a vote of censure on the local Government passed, but the attempt to frame the same proved a failure.

At last Mr. Williams came to the rescue of the meeting and moved a resolution to the effect that notwithstanding the explanations offered, the electors of the district considered that they had been slighted by the absence of their representatives.

Mr. Dodds seconded the resolution, and it being put to the meeting, which throughout displayed a want of vitality, was carried by a majority of SEVEN to two.

A motion to adjourn followed and was carried unanimously.

JOHN WILSON
 THE "GARRICK'S HEAD" INN
 EASTON, SURREY.
 (Incorporated in England)
 The Hay & Straw Co.,
 Limited.
 LONDON.

JOHN WILSON
 THE "GARRICK'S HEAD" INN
 EASTON, SURREY.
 (Incorporated in England)
 The Hay & Straw Co.,
 Limited.
 LONDON.

THE LAL
 Fire Insurance Company.
 (Incorporated in England)
 The Lal Fire Insurance Company, Limited.
 LONDON.

ernor Seymour respecting the construction of a dock in British Columbia.

In reply, I am commanded by my Lords Commissioners to transmit to you, for the information of the Secretary of State for the Colonies, the copy of a report from the hydrographer on this subject, and I am to request that you will inform the Duke of Buckingham that my Lords Commissioners entirely concur in the hydrographer's views of the advantages of Esquimalt Harbor over Burrard Inlet.

I am, &c.,
(Signed,)

W. G. ROMAINE.

Memorandum by the Hydrographer.

29th April, 1868.

I have considered this question so maturely, and so often expressed an opinion on it, after a personal experience of the positions extending over many years, that I have no hesitation in repeating my opinion that Esquimalt Harbor is the fittest place for a naval dock, and that the spot recommended by Admiral Hastings is the best that could be selected.

Esquimalt is and always must be the principal seaport in these colonies. What naval works we have are there. Esquimalt is easy of defence, and an enemy could not injure a dock there unless he got possession of the place—and there is no reason why he could not get possession of Burrard Inlet as easily as Esquimalt.

A vessel arriving at Esquimalt damaged would have to be towed one hundred (100) miles before she would reach Burrard Inlet.

Unless Esquimalt is abandoned as the naval head quarters, and all the establishments removed to Burrard Inlet, which I do not contemplate as possible, then I do not think it possible to entertain the question of a Government dock at Burrard Inlet.

(Signed,)

GEORGE HENRY RICHARDS,
Hydrographer.

**GUARANTEE FOR CONSTRUCTION OF FIRST-CLASS GRAVING
DOCK AT ESQUIMALT.**

In Section 12. Terms of Union between British Columbia and Dominion of Canada:

"The Dominion Government shall guarantee the interest for ten years from the date of the completion of the works, at the rate of five per cent. per annum, or such sum, not exceeding £100,000 sterling, as may be required for the construction of a first-class Graving Dock at "Esquimalt."

BRITISH COLUMBIA.

ESQUIMALT GRAVING DOCK.

THE GOVERNMENT OF BRITISH COLUMBIA are prepared to receive Tenders for the construction of a Graving Dock, at the Naval Station, Esquimalt Harbor, under the Guarantee provided in the Twelfth Section of the Terms of Union of this Province with the Dominion of Canada, which section is in the following words:

"The Dominion Government shall guarantee the interest for ten years from the date of the completion of the work, at the rate of five per cent. per annum, on such sums not exceeding £100,000 sterling, as may be required for the construction of a first-class Graving Dock at Esquimalt.

The Dock to be of masonry, and of not less than the following dimensions:

- Length of floor, 370 feet;
- Do. over all, 400 feet;
- Width between copings, 90 feet;
- Do. on floor, 45 feet;
- Do. of entrance, 68 feet.

To afford a depth of water on the sill of not less than 26½ feet at high water springs, and to be substantially constructed to the approval of Government, upon a site to be provided by the person whose Tenders may be accepted.

Further particulars as to site, borings, &c., may be obtained from T. A. Bulkley, Esq., Chief Engineer to Government, upon application, in writing, to the Chief Commissioner of Lands and Works.

Tenders must specify the time within which the Dock will be completed, and must be accompanied by drawings and descriptions, showing exact dimensions, material, and mode of construction of proposed Dock.

Tenders are to be sealed, superscribed "Tender for Esquimalt Graving Dock," addressed to the Chief Commissioner of Lands and Works, Victoria, British Columbia, and delivered at his office before noon of the 15th day of November, 1872.

Persons who may consider the above guarantee to be insufficient, are at liberty to tender on the basis of such supplemental guarantee by the Provincial Government, or on such other financial inducements, as they may suggest.

The Government do not bind themselves to accept the lowest or any tender.

Each Tender must be accompanied by a Bond from the Contractor, and two sufficient sureties for the payment of £10,000 to Her Majesty, Her Heirs and Successors, conditioned upon the due fulfilment of the Tender which it accompanies; provided it be accepted within three months from the said 15th November.

By Command,

GEO. A. WALKEM,

Chief Commissioner of Lands and Works.

LANDS AND WORKS OFFICE,

Victoria, April 27th, 1872.

GRAVING DOCK TENDERS.

Extract from BRITISH COLONIST's published report of the proceedings of the Legislative Assembly, April 4, 1872, respecting tenders for the construction of a first class Graving Dock at Esquimalt:

"THE GRAVING DOCK.—The Chief Commissioner, on behalf of the Government, brought this question before the House.

"He said advertisements for tenders had been inserted as far back as November last, *yet only one tender* had been received. This tender had been sent in by a Civil Engineer—Mr. Bulkley.

"The site for the Dock proposed by that gentleman was Thetis Cove, at Esquimalt, as possessing the necessary qualifications for the work. The tender was alternative :

"1st.—For a Dock 450 feet long, according to dimensions laid down by the Government, £188,000 ; a guarantee of 54 per cent. interest on £188,000, for thirty-five years from date of completion.

"2nd.—For a Dock 380 feet over all, and 350 feet on the blocks, on a total guarantee of 6 per cent. on the sum of £115,000, for thirty years from the date of completion.

"In either case, the half of all profits over ten per cent. during the period of guarantee, to be handed to the Government.

"Admission of stores and machinery free of duty.

"3rd.—For a Dock, length 400 feet, floor 370 feet ; depth on sill at high water, 25 feet ; highwater springs 26 feet, on a guarantee of seven per cent., for twenty-five years from completion, on £180,000, the Government to have the right of purchase between the tenth and twenty-fifth year, at that rate. Excess (if any) over that sum to be paid by the Government."

First Report of Chief Engineer to Government on Graving Dock.

OFFICE OF CHIEF ENGINEER TO GOVERNMENT,

VICTORIA, Aug. 17th, 1872

The Hon. The Chief Commissioner Lands and Works :

SIR :

I have the honor to report the completion of boring operations at Esquimalt. They have been carried on in

"Thetis Cove," and are a continuation and extension of those which I undertook for myself at the commencement of the year.

For reasons which I shall give further on, I have not thought it necessary to incur the expense of boring in "Lang Cove" or in other parts of Esquimalt Harbor.

The borings made are 89 in number of various depths; in addition to a shaft which I had sunk at the inshore limit of proposed Dock, partly to form a more correct idea of the strata, than can be arrived at from borings,—and partly to ascertain the probable amount of water to be met with in excavating foundations.

In this respect the result was most satisfactory—the quantity not exceeding 8 gallons per hour, at a depth of 87 feet below the surface.

I shall shortly have the honor of forwarding to you the result of the borings in detail, with plans, sections, and other information for parties desirous of tendering for the undertaking; in the meantime, however, I may state that, although the borings have not justified my former opinion that there was no rock in the cove, they have fully confirmed me in my conviction that "Thetis Cove" is the most desirable site for the construction of a Graving Dock.

The rock, which is visible in the centre of shore line at high water mark, and which in the first instance I supposed to be a large boulder, proves to be the outcrop of a ridge which extends across the entire head of the Cove—on the East side it continues at a depth of only 6 to 10 feet, but on the West it dips rapidly down to a depth of 25 and 30 feet below high water mark.

By locating the Dock on the Western side of the Cove, the rock cutting will only occur in the foundations, and for a distance of about 80 feet. The difference in cost of this will be insignificant, but additional care will be necessary in preparing the foundations, so as to obtain a uniform bearing surface.

The borings taken in "Lang Cove" some time since, were not, as I learn, very extensive, and could hardly be taken as furnishing conclusive evidence as to the non-existence of rock in that locality.

But in comparing the advantages of the two Sites, I am content to assume there is no Rock to be met with there.

In originally selecting "Thetis Cove" I was entirely unbiassed—I was aware that "Constance (or more accurately "Lang") Cove" had been mentioned—though I did not know it had been so strongly recommended as I have since ascertained was the case. And I still hold to my opinion as to "Thetis Cove" being *the* site as regards economy and facility of construction, and as being more sheltered and consequently easier of access.

Being anxious, however, to place before Government something more than my own bare opinion in this matter, and acting upon a suggestion of His Excellency the Governor, I beg to submit a comparative statement of the cost of Dock in the alternative sites.

Now, although the cost of *actual* construction of the Graving Dock itself may be assumed as the same in either place, there are several variable items in connection with the work which will considerably affect the total cost. Among these the following are the most important: viz,—

1st. "*Cofferdam,*" or the cost of excluding Sea waters during construction.

2nd. "*Excavation for Foundations,*"

3rd. "*Purchase of necessary Land.*"

Wherever the Dock is located, in order to make it complete, it will be necessary to fill in round the sides and back, to at least 8 feet above high water—we have therefore:—

4th. "*Reclamation Round Dock.*"

Arranged in the shape of a Debtor and Creditor account, the comparative cost will be as follows:—

DOCK IN "LANG COVE."

Dr.	Cr.				
Cofferdam. Length 800 feet. Mean Depth 33 feet. Estimated Cost.....	<table border="1"> <tr> <td data-bbox="579 271 809 353"> Value of Materials of Cofferdam after completion: say 10 p c of cost..... </td> <td data-bbox="833 335 908 360">4,000.00</td> </tr> </table>	Value of Materials of Cofferdam after completion: say 10 p c of cost.....	4,000.00		
Value of Materials of Cofferdam after completion: say 10 p c of cost.....	4,000.00				
Excavating for Foundation. Mean Depth 13 feet. Area, say 4000 sq. yds.— 17,833 c. yds. at \$1.00.	<table border="1"> <tr> <td data-bbox="579 372 809 468"> Value of Land. Purchased 10 acres. Reclaimed 14 do. Total 24 acres at increased value, say \$2 000. </td> <td data-bbox="822 454 908 476">48,000.00</td> </tr> </table>	Value of Land. Purchased 10 acres. Reclaimed 14 do. Total 24 acres at increased value, say \$2 000.	48,000.00		
Value of Land. Purchased 10 acres. Reclaimed 14 do. Total 24 acres at increased value, say \$2 000.	48,000.00				
Land Purchase. 10 acres at \$1.600.....	<table border="1"> <tr> <td data-bbox="489 483 574 516">16,000.00</td> <td data-bbox="811 491 908 516"><u>\$62,000.00</u></td> </tr> </table>	16,000.00	<u>\$62,000.00</u>		
16,000.00	<u>\$62,000.00</u>				
Reclamation round Dock. Area 15 Acres. Mean Depth 14 feet. Deducting area of Dock, and material from Excavation, we have 300-000 c. yds., including getting, loading, hauling, tipping, levelling and settlement, at (at least) 50 cents.....	<table border="1"> <tr> <td data-bbox="489 721 574 743">150,900.00</td> <td data-bbox="642 724 908 750">Debtor Balance, \$ 171,853.00</td> </tr> <tr> <td data-bbox="470 746 574 774"><u>\$223,853.00</u></td> <td data-bbox="800 753 908 774"><u>\$223,853.00</u></td> </tr> </table>	150,900.00	Debtor Balance, \$ 171,853.00	<u>\$223,853.00</u>	<u>\$223,853.00</u>
150,900.00	Debtor Balance, \$ 171,853.00				
<u>\$223,853.00</u>	<u>\$223,853.00</u>				

DOCK IN "THETIS COVE."

Dr.		Cr.	
<i>Cofferdam.</i>		<i>Value of Materials</i>	
Length 410 feet.		of Cofferdam at the com-	
Mean Depth 35 feet.		pletion: say 10 p. c. of	
Estimated Cost.....	22,140.00	cost.....	2,200.00
<i>Excavation for Foundation.</i>		<i>Value of Land.</i>	
Mean Depth 19 feet.		Purchased 8 acres.	
Area 4,000 sq. yds.		Reclaimed 2½ acres.	
25,333 c. yds.		Total 10½ at \$2,000.....	
of this:			20,500.00
24,000 c. yds., ordinary at			\$22,700.00
\$1.00.....	24,000.00		
1,333 c. yds., Rock at			
\$5.00	6,665.00		
<i>Land purchase.</i>			
8 acres at \$1,600	12,800.00		
<i>Reclamation round Dock.</i>			
Area 3½ acres.			
Mean Depth 15½ feet.			
Deducting area of Dock			
and material from Ex-			
cavation, we have 33-			
417 c. yds. at 50 cents...	16,708.00	Debtor Balance...	\$59,613.00
	\$82,313.00		\$82,313.00
Debtor Balance against "Lang Cove".....		\$171,853.00	
Do. Do. Do. "Thetis Cove".....		59,613.00	
		\$112,240.00	

Showing a balance against "Lang Cove" and in favor of "Thetis Cove" of over one hundred and twelve thousand dollars, (\$112,000.00.)

In addition to the above I might bring yet other items as against "Lang Cove:" viz.—

Cost of extra length of Face Wall.

Cost of probable extra pumping during progress of works, owing to increased area of surface and greater length of Cofferdam for leakage.

Saving at "Thetis Cove" in obtaining puddle for Cofferdam from the inshore Excavation for Dock—

But I think I have already made out a sufficiently strong case in favor of my recommendation, and I trust it may meet with the approval of Government.

I enclose two outline tracings showing the Soundings in the respective sites; the position of Dock necessary to obtain specified depth of water on sill, and the extent of water surface to be reclaimed. These will be sufficient to explain the present communication, and I shall shortly have the honor of submitting further details mentioned at the commencement of this letter.

I would wish, however, to take the present opportunity of stating that I am far from sanguine as to any tender being received for the undertaking such as Government would feel inclined to entertain.

If I might venture to express an opinion it is that it will be found more economical to carry out the work as a Government measure.

No private Capitalists can be expected to embark in the undertaking, unless able to calculate upon a return of 10 p.c., whereas a return of 5 p.c. would be sufficient if under Government control.

Again—I would respectfully submit that from the nature of the work itself, being intended to meet future requirements, and to attract Shipping to the Province, more than to meet any existing commercial demands, it is a work coming within the scope of the Dominion or Provincial Government rather than within that of private capital and enterprise.

In conclusion it gives me pleasure to state that Mr. Bonwick has proved himself a valuable assistant in connection with the boring, and I desire to recommend him to your favorable consideration.

I have the honor to be

Sir,

Your Obedt. Servant,

THOS. A. BULKLEY,

Chief Engineer to Government.

Second Report of Chief Engineer to Government on Graving Dock.

VICTORIA, BRITISH COLUMBIA.

The Hon. The Chief Commissioner Lands and Works :

SIR,

In my communication of the 17th of August, I reported upon the advantages offered by the site which I recommended, for the construction of the Graving Dock at Esquimalt, as compared with the site formerly proposed, the result showing a balance in favor of my site of \$112,000.

At the same time, I stated my doubts as to any tender being received for the work, which Government would consider satisfactory, and I mentioned other reasons which pointed to the desirability of the work being carried out under direct Government control.

I now beg to submit my general estimate of the cost of the work, amounting to \$571,678, as follows :

Estimate of Cost of Construction in Site, recommended by Mr. Bulkley.

Purchase of Land.....	\$12,800
Coffer dam.....	22,140
Excavation.....	30,665
Reclamation.....	16,708
Bearing Piles.....	12,500
Masonry of all kinds.....	275,800
Shear Legs and Tackle.....	10,000
Blocks and Mooring Posts.....	5,000
Engines and Pumps.....	40,000
Caisson.....	30,000
Plant.....	30,000
Buildings.....	12,000
Contingencies and Superintendence, 15 per cent.....	74,565
Total.....	\$571,678

In the event of the work being undertaken by Government, it may be assumed that the Dominion would consent to its guarantee being capitalised.

Supposing the guarantee, viz., 5 p. c. on £100,000, for 10 years, to be payable half yearly, and discounting at the rate of 5 per cent., its capitalised value would amount to \$178,843.

Objection may be taken to this on the ground that the Dominion would thus lose the benefit of any profit earned by the Graving Dock, during the first ten years, in excess of working expenses and maintenance. But, otherwise, the result to the Province should be the same in whichever way the guarantee is paid.

Supposing it, however, to be capitalised, we have:—

Estimated cost of Graving Dock.....	\$571,678
Less amount to be realised by capitalising the Dominion Guarantee.....	178,843

Leaving a balance to be provided by this Province of.....	\$392,835
Say.....	\$400,000

This \$400,000 should be obtained, on the security of the annual payment, by the Dominion, under terms of Confederation, at 5½ per cent.; and with a sinking fund of 2 per cent., would be paid off in 25 years, at an annual cost to the Province of \$30,000, or for a total payment of \$750,000.

Considering the case of the most favorable "tender" yet received, viz: 7 per cent. on £130,000, for 25 years, you will perceive that the total of money payments in the shape of interest (less, of course, any profit earned by the Dock during the 25 years, which cannot be calculated in advance), for which the Province would be responsible, would amount to £227,500
Less payment by Dominion under guarantee..... 50,000

Leaving a balance payable by the Province..... £177,500
Or \$870,000, spread over 25 years, after which time the Dock would still remain the property of a private Company.

Whereas, in the former case the actual payments made during 25 years would amount to only \$750,000, and the Dock would remain the unincumbered property of the Province.

Unless, therefore, tenders are made much more favorable than any yet received by Government—and this seems to me improbable, though I may be prejudiced—it would appear that the work is one which can be most economically carried out by Government direct.

Referring, again, to my letter of August the 17th, I shall be glad to learn whether Government have come to any decision with regard to my recommendation for a site for the proposed Dock.

I have the honor to be,

Sir,

Your Obed't. Servant,

THOS. A. BULKLEY,

Chief Engineer to Government.

NOVEMBER 29TH, 1872.

